

# Case studies of the application of the Certification Framework to two geologic carbon sequestration sites

GCCC Digital Publication Series #09-01

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**Keywords:**

Risk–Certification Framework

**Cited as:**

Oldenburg, C.M., Bryant, S.L., Nicot, J.-P., 2009, Case studies of the application of the Certification Framework to two geologic carbon sequestration sites: Energy Procedia, Volume 1, Issue 1, February 2009, Pages 63-70. GCCC Digital Publication #09-01.

**Abstract:**

We have developed a certification framework (CF) for certifying that the risks of geologic carbon sequestration (GCS) sites are below agreed-upon thresholds. The CF is based on effective trapping of CO<sub>2</sub>, the proposed concept that takes into account both the probability and impact of CO<sub>2</sub> leakage. The CF uses probability estimates of the intersection of conductive faults and wells with the CO<sub>2</sub> plume along with modeled fluxes or concentrations of CO<sub>2</sub> as proxies for impacts to compartments (such as potable groundwater) to calculate CO<sub>2</sub> leakage risk. In order to test and refine the approach, we applied the CF to (1) a hypothetical large-scale GCS project in the Texas Gulf Coast, and (2) WESTCARB's Phase III GCS pilot in the southern San Joaquin Valley, California.

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**[Volume 1, Issue 1, February 2009, Pages 63-70](#)**

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